

## **Martha K. Watt - Hydrologist, GS-12**

1992-2003, Project staff on modeling projects

- The Toms River project modeled the unconfined Kirkwood-Cohansey aquifer system in the NJ Coastal Plain. Ground-water flow and its interaction with surface water and the response to withdrawals were the focus of the project.
- A study using an existing model of carbonate rock and valley-fill aquifers in Randolph Township, Northern NJ, was used to define contributing areas to withdrawal wells under different withdrawal conditions. MODFLOW and MODPATH programs were used.
- Two studies in the Pennsauken Township area were completed. Both ground-water flow models examined the Potomac-Raritan-Magothy aquifer system.
  1. One model used particle tracking to define the contributing areas for the public and non-community water supply wells.
  2. Another model of the ground-water flow system and advective transport of chromium contaminated ground water was developed.

2003-present, Project chief of the Model Maintenance program

- Program was started in 1995 to maintain and update ground-water flow models that were constructed in the NJ WSC.
- Newly published models are archived and older archived models are updated, checked, and documented. Eighteen models are currently archived; 16 of these models are available to the public through our website.
- Checking these models require knowledge of MODFLOW-88, 96, and 2000, MFI, and MFI2K. Zonebudget and pre- and post-processing aml's written for use in ARC/INFO assist in my data manipulation and checking.
- The model maintenance project also supports project work done within the WSC. Existing ground-water flow models are used to provide boundary flows for smaller more local models.
- Assistance on projects using existing models provided experience with the GWM module of MODFLOW. GWM was used with the NJ RASA model to do optimizations and evaluate different water-supply management options.

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